

The Judicial Retirement System of New Jersey Annual Report of the Actuary

Actuarial Valuation July 1, 2016



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February 3, 2017

State House Commission The Judicial Retirement System of New Jersey Trenton, New Jersey 08625

Members of the Commission:

The law governing the operation of the Judicial Retirement System of New Jersey provides for annual actuarial valuations of the System. The results of the July 1, 2016 valuation are submitted in this report, which also includes a comparison with the results of the July 1, 2015 valuation.

The valuation provides information concerning the financial condition of the Plan as of July 1, 2016, and sets forth the basis for determining the recommended annual contribution for the plan year beginning July 1, 2016.

The valuation reflects Chapter 78, P.L. 2011, which increases member contributions by 9% of salary phased-in over a period of seven years, beginning October 2011. The increase in member contributions will be fully phased-in in July 2017.

As required under Section 32 of Chapter 89, P.L. 1965, experience studies are performed once in every three year period. The valuation was prepared using the demographic assumptions recommended on the basis of the July 1, 2011 – June 30, 2014 Experience Study and approved by the State House Commission on October 26, 2015. These assumptions will be reviewed in a June 30, 2017 experience study and will remain in effect for valuation purposes until such time as the State House Commission adopts revised demographic assumptions.

The Treasurer has recommended a change in the economic assumptions used for the valuation. The rate of investment return has been reduced from 7.90% per annum to 7.65% per annum. The assumed future salary increases of 2.50% per annum through fiscal year 2021 and 3.50% per annum for fiscal years 2022 and thereafter have been reduced to the 2.00% per annum through fiscal year 2025 and 3.00% per annum for fiscal years 2026 and thereafter. These assumptions will remain in effect for valuations purposes until such time the State House Commission or the Treasurer recommends revised assumptions.

In my opinion, the actuarial assumptions used are appropriate for purposes of the valuation and are reasonably related to the experience of the System and to reasonable long-term expectations. These assumptions were selected in accordance with applicable Actuarial Standards of Practice published by the Actuarial Standards Board.

The valuation reflects the actual fiscal year 2016 State contributions of \$13,951,000. The valuation also reflects the anticipated fiscal year 2017 State Pension Contribution of \$17,662,708. This amount may be subject to change per the requirements of the State's fiscal year 2017 spending plan.

Reporting requirements of Statements No. 67 and No. 68 are effective as of the June 30, 2014 and June 30, 2015 reporting dates, respectively. These requirements are addressed in separate reports.



The State of New Jersey's Division of Pensions and Benefits reported the individual data for members of the Judicial Retirement System of New Jersey as of the valuation date for use in the preparation of this report. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness. The amount of assets in the trust fund taken into account in the valuation was based on statements prepared for us by the Division of Pensions and Benefits. The accuracy of the results presented in this report is dependent on the accuracy of the data.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Any Statements regarding funded ratios have no specific relevance to any funded position that might be determined in the event a settlement is contemplated. An analysis of the potential range of future results is beyond the scope of this valuation.

Use of this report for any other purpose or by anyone other than the State House Commission or staff of the State of New Jersey's Division of Pensions and Benefits may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. You should ask Conduent to review any statement you wish to make on the results contained in this report. Conduent will accept no liability for any such statement made without prior review by Conduent.

I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Qualification Standards of the Academy to render the actuarial opinions contained herein. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions concerning it.

The Table of Contents, which follows, highlights the Sections of the Report.

Respectfully submitted,

Aaron Shapiro, F.S.A., E.A., M.A.A.A. Principal, Consulting Actuary

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Section I – Summary of Key Results

The Judicial Retirement System of New Jersey became effective June 1, 1973. This report prepared as of July 1, 2016, presents the results of the annual actuarial valuation of the Fund.

For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized on the following pages.

Valuation Date		July 1, 2016		July 1, 2015
Number of Members		410		404
Annual Compensation	\$	68,062,584	\$	67,097,166
Number of Pensioners and Beneficiaries		605		586
Annual Allowance	\$	55,093,264	\$	52,965,770
Number of Vested Terminated Members		4		4
Annual Allowances	\$	183,500	\$	183,500
<u>Assets</u>				
Market Value of Assets	\$	196,407,352 ¹	\$	225,712,843
Valuation Assets	\$	226,310,119 ¹	\$	243,864,022
Contribution Rates				
Recommended Contribution				
Normal Contribution		17.44 %		18.80 %
Accrued Liability Contribution	_	50.93	_	47.01
Total Pension Contribution		68.37 %		65.81 %
Non-Contributory Group Insurance Premium		1.02 %		0.97 %
Contribution Amounts				
Recommended Contribution				
Normal Contribution	\$	11,866,873	\$	12,612,089
Accrued Liability Contribution	_	34,665,070		31,544,682
Total Pension Contribution	\$	46,531,943	\$	44,156,771
Non-Contributory Group Insurance Premium	\$	693,000	\$	651,000

¹ Reflects the State's fiscal year 2017 anticipated contribution of \$17,662,708 discounted one year. This amount is included as a receivable contribution but may be subject to change per the requirements of the State's fiscal year 2017 spending plan.

Section I – Summary of Key Results (continued)

The major benefit and contribution provisions of the statute as reflected in the valuation are summarized in Appendix A.

The valuation reflects the State's fiscal year 2017 anticipated contribution of \$17,662,708 discounted one year. This amount is included as a receivable contribution but may be subject to change per the requirements of the State's fiscal year 2017 spending plan.

There were no changes to the benefit and contribution provisions.

The valuation reflects Chapter 78, P.L. 2011, which increased member contribution by 9% of salary phased-in over a period of seven years, beginning October 2011. The increase in member contributions will be fully phased-in in July 2017.

Effective June 30, 1996, Chapter 113, P.L. 1997 provided that the amount of compensation used for employer and member contributions and benefits under the program cannot exceed the compensation limitation of Section 401(a)(17) of the Internal Revenue Code. The compensation limit for the 2016 valuation is \$265,000. The compensation limit is assumed to increase annually at a rate of 3% per annum.

As required under Chapter 140, P.L. 1973 experience studies are preformed once in every three year period. The valuation was prepared using demographic assumptions recommended on the basis of the July 1, 2011 - June 30, 2014 Experience Study and approved by the State House Commission on October 26, 2015. The new assumptions are outlined in Appendix B.

The Treasurer has recommended a change in the economic assumptions used for the valuation. The rate of investment return has been revised from 7.90% per annum to 7.65% per annum. The assumed future salary increases of 2.50% per annum through fiscal year 2021 and 3.50% per annum for fiscal years 2022 and thereafter have been revised to be 2.00% per annum through fiscal year 2025 and 3.00% per annum for fiscal years 2026 and thereafter. These assumptions will remain in effect for valuation purposes until such time the State House Commission or Treasurer recommends revised assumptions.

There were no other changes to the actuarial assumptions and methods from those used in the prior valuation. The actuarial assumptions and methods used in this valuation are summarized in Appendix B.

Section I – Summary of Key Results (continued)

The valuation reflects the State's fiscal year 2017 anticipated contribution of \$17,662,708 discounted one year. This amount is included as a receivable contribution but may be subject to change per the requirements of the State's fiscal year 2017 spending plan.

The combination of the plan provisions, actuarial assumptions and member and beneficiary data is used to generate the overall required level of employer contributions. The recommended contribution is developed in Section III F. These contributions are composed of two separate portions, an "accrued liability contribution" and a "normal contribution".

The valuation generates a balance sheet which summarizes in some detail the total present and prospective assets and liabilities of the Fund. A summary comparison of the balance sheets as of July 1, 2015 and July 1, 2016 is set forth in the following table.

Table I

Comparative Balance Sheet

		2016		2015
<u>Assets</u>				
Actuarial value of assets of Fund	\$	226,310,119	\$	243,864,022
Unfunded accrued liability/(surplus)	_	403,500,693	_	358,500,178
Total Assets	\$	629,810,812	\$	602,364,200
Accrued Liabilities				
Present value of benefits to present beneficiaries payable from the Retirement Reserve Fund	\$	460,298,517	\$	430,541,499
Present value of benefits to present active members and terminated vested members	_	169,512,295	_	171,822,701
Total Accrued Liabilities	\$	629,810,812	\$	602,364,200

Section II – Employee Data

The data employed for the valuation was furnished to the actuary by the Division of Pensions and Benefits. The following summarizes and compares the Fund membership as of July 1, 2015 and July 1, 2016 by various categores.

Active Membership

		2016	2015		
		Annual		Annual	
Group	Number	Compensation	Number	Compensation	
Men	246	\$ 40,829,942	253	\$ 42,008,938	
Women	164	\$ 27,232,642	151	\$ 25,088,228	

Retired Members and Beneficiaries

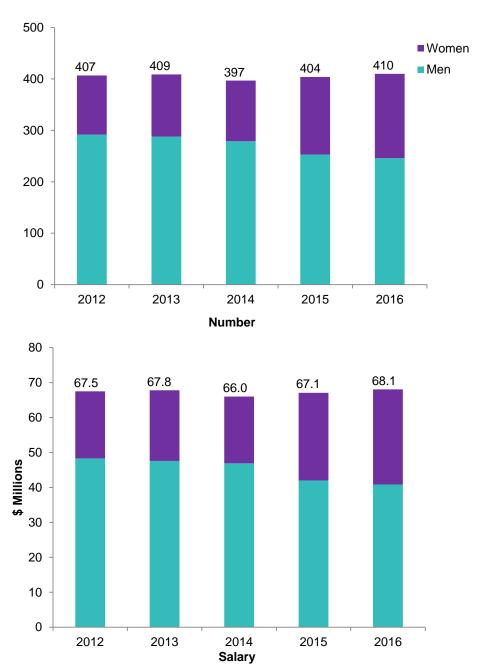
	2016			2015		
Group	Annual Number Allowances				Annual Allowances	
Deferred Terminated Vesteds	4	\$	183,500	4	\$	183,500
Service Retirements	438	\$	45,779,171	427	\$	44,201,394
Disability Retirements	7	\$	818,564	7	\$	818,564
Beneficiaries	160	\$	8,495,529	152	\$	7,945,812

Appendix C provides a detailed distribution between groups.

Graphic presentations of the statistical data on membership for the five preceding years are shown on the following pages.

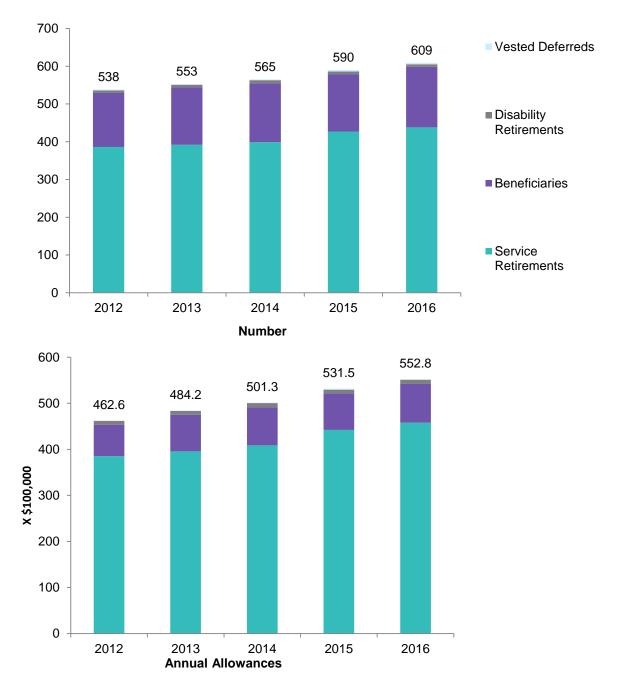
The Judicial Retirement System Of New Jersey

Summary of Active Participants



The Judicial Retirement System of New Jersey (continued)

Summary of Retired Participants



Section III - Assets, Liabilities and Contributions

A. Market Value of Assets as of June 30, 2016

\$	223,043 3,272,055 182,357,733 390 149,725
\$	3,272,055 182,357,733 390
	182,357,733 390
	390
	149,725
	,
	350,324
	888,102
	0
	775,888
	0
\$	188,017,260
\$	3,278,008
	289,120
	984,307
	3,268,112
	48,168
	0
_	149,725
\$	8,017,440
\$	179,999,820
\$_	16,407,532
\$	196,407,352 ²
	\$ \$ \$ \$

¹ Reflects the State's fiscal year 2017 anticipated contribution of \$17,662,708 discounted one year. This amount is included as a receivable contribution but may be subject to change per the requirements of the State's fiscal year 2017 spending plan.

² Excludes assets held in the Non-Contributory Group Insurance Fund.

Section III - Assets, Liabilities and Contributions (continued)

B. Reconciliation of Market Value of Assets: June 30, 2015 to June 30, 2016

1.	Mar	ket Value of Assets as of June 30, 2015	\$	212,783,371
2.	Incr	eases		
	a.	Pension Contributions		
		Members' Contributions	\$	6,676,397
		Transfer from Other Systems		1,309,641
	b.	Accumulative Interest		
		Transfer from Other Systems		1,285,831
	C.	Employers' Contributions		
		State Appropriations		13,951,000
		Non-Contributory Group Insurance		843,774
		Transfer from Other Systems		726,284
		Administrative Fee Loans		184
	d.	Income		
		Per Statement		(2,721,949)
	e.	Total	\$	22,071,162
3.	Dec	creases		
	a.	Benefits Provided by Members		
		Withdrawals - Members' Contribution		
		Regular	\$	0
		Transfer		0
		Withdrawals - Member Interest		
		Regular		0
		Transfer		0
	b.	Benefits Provided by Employers and Members		
		Retirement Allowances		50,226,767
	C.	Benefits Provided by Employers		
		Benefit Expense - Pension Adjustment		3,615,980
		Administrative Expense		168,064
		Transfer Withdrawal - Employer Benefits		0
		Administrative Expense Loans		128
		NCGI Premium Expense		843,774
	d.	Total	\$	54,854,713
4.	Pre	liminary Market Value of Assets		
	as o	of June 30, 2016: 1. +2.(e) - 3.(d)	\$	179,999,820
5.	Disc	counted State Appropriations Receivable	_	16,407,532 ¹
6.	Mar	ket Value of Assets as of June 30, 2016 =		
	4. +	5.	\$	196,407,352 ²

¹ Reflects the State's fiscal year 2017 anticipated contribution of \$17,662,708 discounted one year. This amount is included as a receivable contribution but may be subject to change per the requirements of the State's fiscal year 2017 spending plan.

 $^{^{\}rm 2}$ Excludes assets held in the Non-Contributory Group Insurance Fund.

Section III - Assets, Liabilities and Contributions (continued)

C. Development of Actuarial Value of Assets as of July 1, 2016

The actuarial value of plan assets is determined using a five-year average market value with write up. The following summary shows the development of the actuarial value of plan assets for the current valuation:

1.	Actuarial Value of Assets July 1, 2015		
	(without State Appropriations Receivable)	\$ 230,934,550	
2.	Net Cash Flow excluding investment income	(30,061,602)	
3.	Expected Investment Income at 7.90%		
	a. Interest on assets as of July 1, 2015:	18,243,829	
	b. Interest on Net Cash Flows	(1,738,498)	
	c. Total	\$ 16,505,331	
4.	Expected Actuarial Value of Assets as of July 1, 2016:		
	1. + 2. + 3.(c)	217,378,279	
5.	20% of Difference from Preliminary Market Value of Assets	(7,475,692)	
6.	Discounted State Appropriations Receivable	16,407,532	1
7.	Actuarial Value of Assets as of July 1, 2016 = 4. + 5. + 6.	\$ 226,310,119	2

¹ Reflects the State's fiscal year 2017 anticipated contribution of \$17,662,708 discounted one year. This amount is included as a receivable contribution but may be subject to change per the requirements of the State's fiscal year 2017 spending plan.

D. Accrued Liabilities as of July 1, 2016

1. Retirees and Beneficiaries

	a. Service Retirementb. Disability Retirementsc. Beneficiariesd. Total	\$ 399,803,843 5,985,223 54,509,451 460,298,517
2.	Terminated Vested Members	\$ 1,754,306
3.	Active Participants	
	 a. Service Retirement b. Disability Retirement c. Spousal Annuity Death Benefit d. Total 	\$ 157,891,090 5,691,852 4,175,047 167,757,989
4.	Total Accrued Liability ¹ = $1.(d) + 2. + 3.(d)$.	\$ 629,810,812

¹ Excludes lump sum death benefits payable from the Non-Contributory Group Insurance Premium Fund

² Excludes assets held in the Non-Contributory Group Insurance Fund.

Section III - Assets, Liabilities and Contributions (continued)

E. Development of Normal Cost as of July 1, 2016

1.	Service Retirements	\$	15,107,320
2.	Disability Retirement		990,101
3.	Spousal Annuity Death Benefit	_	1,851,377
4.	Total Pension Normal Cost ¹ = 1 + 2 + 3	\$	17,948,798

¹ Excludes lump sum death benefits payable from the Non-Contributory Group Insurance Premium Fund

F. Development of Recommended State Pension Contributions

	1.	Accru	ued Liability	\$	629,810,812
	2.	Actua	arial Value of Assets		226,310,119
	3.		nded Actuarial Accrued ity/(Surplus) = 1 2.	\$	403,500,693
	4.	Amor	tization Period		30
	5.		tization of Unfunded Actuarial Accrued ity payable July 1, 2017 (Level Dollar)	\$	34,665,070
	6.	a. b. c. d.	Gross Normal Cost (excluding Non- Contributory Group Insurance Premium) Expected Member Contributions State Normal Cost = (a) - (b) State Normal Cost payable July 1, 2017	\$ 	17,948,798 6,925,228 11,023,570
		u.	= (c) * 1.0765	\$	11,866,873
	7.		Recommended Pension Contribution as y 1, 2017 = 5. +6.(d)	\$	46,531,943
G.	Non-Contributory Group Insurance Premium (One-Year Term Cost)				693,000

Section IV - Comments Concerning the Valuation

The variation in liabilities and contributions reflects the System's actual experience during the year. The System experienced a net actuarial loss during the year that ended June 30, 2016

The System experienced a net liability loss among active and retired members. There was also a loss due to an actual return on System assets less than expected. For valuation purposes, a 7.90% per annum rate or return was assumed for the period July 1, 2015 through June 30, 2016. The actual return on the Fund's actuarial value of assets was 4.18% for this period.

The following shows the development of the actuarial experience and identifies the major experience components, and discusses the impact of the unfunded liability on various funded ratios:

A. Calculation of Actuarial Experience for the Year Ended June 30, 2016.

1.	Unfunded Accrued Liability as of July 1, 2015	\$ 358,500,178
2.	Gross Normal Cost as of July 1, 2015	17,574,257
3.	Interest on (1) and (2) at 7.90%	29,709,880
4.	Actual Members' Contributions Received	6,676,397
5.	Employers' Contributions (including discounted receivable)	16,407,532
6.	Interest on Contributions (excluding receivables) at 7.90%	 258,705
7.	Expected Unfunded Accrued Liability/(Surplus) as of July 1, 2016 = (1) + (2) + (3) - (4) - (5) - (6)	\$ 382,441,681
8.	Change in Unfunded Accrued Liability due to the revised fiscal year 2016 State contribution ¹	(100)
9.	Change in Unfunded Accrued Liability due to assumption changes	7,095,990
10.	Actual Unfunded Accrued Liability as of July 1, 2016	 403,500,693
11.	Actuarial (Gain)/Loss = (10) - (7) - (8) - (9)	\$ 13,963,122

¹ The anticipated fiscal year 2016 contribution of \$13,950,900 has been increased to \$13,951,000 to reflect the actual State contribution made during fiscal year 2016.

B. Components of Actuarial Experience

1.	Investment (Gain)/Loss	\$ 7,475,692
2.	Other (Gain)/Loss, including mortality, changes in employee data and salary increases different than expected	6,487,430
3.	Total Actuarial (Gain)/Loss	\$ 13,963,122

Section IV – Comments Concerning the Valuation (continued)

C. Funded Ratios

The following table presents the System's funded ratios based on the actuarial value of assets (including receivables) and market value basis (including receivables)

	June 30, 2016	June 30, 2015	Change
Actuarial Value of Assets ¹	35.9%	40.5%	(4.6)%
Market Value of Assets	31.2%	37.5%	(6.3)%

¹ Statutory funded ratio.

The System's statutory funded ratio is 40.5% and 35.9% as of June 30, 2015 and June 30, 2016, respectively. For purposes of Chapter 78, P.L. 2011, the "target funded ratio" is 78.570% and 79.285% for June 30, 2015 and June 30, 2016 respectively. Therefore, the System's statutory funded ratio fell below the "target funded ratio" for June 30, 2015 and the "target funded ratio" for June 30, 2016.

There is a difference on a market value basis since the actuarial value smooths the investment gains and losses over time. Since July 1, 2000, the funded ratio on a market value basis has decreased by 87.8% This decrease is primarily due to investment losses experienced over the period, State contributions less than the statutorily determined amounts, and the strengthening of actuarial assumptions.

As of June 30, 2016, the market value of assets is less than the actuarial liability attributable to retirees Furthermore, if the assets contained in the Annuity Savings Fund (ASF) of \$60,940,480 are excluded, the funded ratio of the remaining market value of assets to the actuarial accrued liability for retirees is 29.4%.

As of June 30, 2016, the ratio of market value of assets to the prior year's benefit payment is 3.6. This is a simplistic measure of the number of years that the assets can cover benefit payments, excluding: future increases in those payments, State and member contributions, and investment income. This ratio decreased by 16% from the previous year's ratio of 4.3. If ASF assets are excluded, since they represent accumulated contributions from active and inactive members, the ratio is 2.5.

Section IV – Comments Concerning the Valuation (continued)

D. Schedule of Assets and Liability

The following presents a ten-year schedule of the System's assets, liabilities and funded ratio. The System's assets and funded ratio are provided on a market value (including receivables) basis and actuarial value of assets (including receivables) basis.

Actuarial		Market		Actuarial		Actuarial	Funded	I Ratio Actuarial
Valuation Date	Va	lue of Assets ¹	Va	lue of Assets ¹	Ac	crued Liability	Market Value	Value
		(a)		(b)		(c)	(a)/(c)	(b)/(c)
7/1/2016	\$	196,407,352	\$	226,310,119	\$	629,810,812	31.19%	35.93%
7/1/2015	\$	225,712,843	\$	243,864,022	\$	602,364,200	37.47%	40.48%
7/1/2014	\$	244,567,822	\$	258,101,497	\$	632,679,937	38.66%	40.79%
7/1/2013	\$	244,280,889	\$	276,966,331	\$	620,376,292	39.38%	44.64%
7/1/2012	\$	243,679,037	\$	290,191,842	\$	605,180,634	40.27%	47.95%
7/1/2011	\$	270,183,306	\$	310,724,782	\$	585,700,787	46.13%	53.05%
7/1/2010	\$	261,523,992	\$	329,030,387	\$	554,540,403	47.16%	59.33%
7/1/2009	\$	261,751,336	\$	355,522,646	\$	594,043,375	44.06%	59.85%
7/1/2008	\$	352,989,790	\$	383,958,713	\$	553,284,647	63.80%	69.40%
7/1/2007	\$	384,497,896	\$	391,321,393	\$	524,970,330	73.24%	74.54%

The information in the above table has been taken directly from the final valuation reports for each plan year and does not
reflect subsequent changes in actual employer contribution amounts from the reported receivable contribution after the
valuation reports were issued.

E. Schedule of Employer Pension Contributions

The following table presents a ten-year schedule that provides information about the System's actuarially determined contribution and the percentage of the actuarially determined contribution recognized by the System as contributed.

		Actuarially		Actual			_	f Contribution ade
Fiscal Year Ending June 30		Determined ontribution ¹ (a)	(Pension Contribution (b)		Contribution Deficiency (a) - (b)	Annual (b)/(a)	Five-Year Average
2017	φ	44 450 774	\$	47 660 700	\$	20, 40,4,002	40.000/	0.4.000/
	\$	44,156,771		17,662,708	*	26,494,063	40.00%	34.28%
2016	\$	46,502,819	\$	13,951,000	\$	32,551,819	30.00%	29.14%
2015	\$	44,334,504	\$	16,506,000	\$	27,828,504	37.23%	23.14%
2014	\$	43,050,167	\$	15,334,000	\$	27,716,167	35.62%	15.70%
2013	\$	40,751,804	\$	11,643,000	\$	29,108,804	28.57%	9.46%
2012	\$	38,352,572	\$	5,479,000	\$	32,873,572	14.29%	13.75%
2011	\$	34,653,737	\$	0	\$	34,653,737	0.00%	22.26%
2010	\$	28,857,945	\$	0	\$	28,857,945	0.00%	29.48%
2009	\$	26,089,212	\$	1,157,000	\$	24,932,212	4.43%	
2008	\$	23,907,860	\$	11,957,000	\$	11,950,860	50.01%	

The information in the above tables has been taken directly from the final valuation reports for each plan year and does not reflect subsequent changes in actual employer contribution amounts from the reported receivable contribution after the valuation reports were issued.

Section V - Level of Funding

The tables below present the liabilities determined on a Financial Accounting Standards Board ASC 715 (formerly Statement No. 87) Accumulated Benefit Obligation (ABO) basis. This is the same approach as was used under GASB Statement No. 5 except that no assumption is made as to future salary increases and assets are at market value with receivables

ASC 715 ABO Funded Ratios

Actuarial present value of accumulated benefits:	June 30, 2016	June 30, 2015
Vested benefits Participants currently		
receiving payments Other participants	\$ 460,298,517 112,076,264	\$ 430,541,499 109,295,990
	\$ 572,374,781	\$ 539,837,489
Non-vested benefits Total	\$ 41,000,851 613,375,632	\$ 41,352,557 581,190,046
Assets at market value ¹	\$ 179,999,820	\$ 212,783,371
Ratio of assets to total present value	29.3%	36.6%

^{1.} Assets at market value do not include any receivable contributions.

The actuarial present value of vested and non-vested accrued benefits was based on an interest rate of 7.65% for 2016 and 7.90% for 2015.

Appendix A

Brief Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

Eligibility for Membership

Chief Justice and associate justices of the Supreme Court, judges of the Superior Court and tax courts of the State of New Jersey.

1. Definitions

Plan Year

The 12-month period beginning on July 1 and ending on June 30.

Service

A year is credited for each year of service as a public employee in the State of New Jersey. Any service, for which member did not receive annual salary of at least \$500, shall be excluded

Final Salary

Annual salary received by the member at the time of retirement or other termination of service. (Effective June 30, 1996, Chapter 113, P.L. 1997 provided that the amount of compensation used for employer and member contributions and benefits under the program cannot exceed the compensation limitation of Section 401(a)(17) of the Internal Revenue Code.)

Accumulated Deductions

The sum of all amounts deducted from the compensation of a member or contributed by him or on his behalf.

Retirement Allowance

Pension derived from contributions of the State plus the annuity derived from employee contributions.

2. Benefits

Service Retirement

- A. Mandatory retirement at age 70. Voluntary retirement prior to age 70 as follows:
 - i. Age 70 and 10 years of judicial service:
 - ii. Age 65 and 15 years of judicial service; or
 - iii. Age 60 and 20 years of judicial service.

Benefit is an annual retirement allowance equal to 75% of final salary.

- B. Age 65 while serving as a judge, 5 consecutive years of judicial service and 15 years in the aggregated of public service; or
 - Age 60 while serving as a judge, 5 consecutive years of judicial service and 20 years in the aggregated of public service.
 - Benefit is an annual retirement allowance equal to 50% of final salary.
- C. Age 60 while serving as a judge, 5 consecutive years of judicial service and 15 years in the aggregate of public service. Benefit is an annual retirement allowance equal to 2% of final salary

for each year of public service up to 25 years plus 1% of final salary for each year in excess of 25 years.

D. Age 60 while serving as a judge. Benefit is an annual retirement allowance equal to 2% of final salary for each year of judicial service up to 25 years plus 1% for each year in excess of 25 years.

Early Retirement

Prior to age 60 while serving as a judge, 5 consecutive years of judicial service and 25 or more years in the aggregate of public service. Benefit is an annual retirement allowance equal to 2% of final salary for each year of public service up to 25 years plus 1% of final salary for each year of public service in excess of 25 years, actuarially reduced for commencement prior to age 60.

Vested Termination

Termination of service prior to age 60, with 5 consecutive years of judicial service and 10 years in the aggregate of public service. Benefit is a refund of accumulated deductions, or a deferred life annuity beginning at age 60 equal to 2% of final salary for each year of public service up to 25 years, plus 1% for service in excess of 25 years.

Death Benefits

Before Retirement

Death of an active member of the plan. Benefit is equal to:

- A. Lump sum payment equal to 1-1/2 times compensation, plus
- B. Spousal life annuity of 25% of final salary payable until spouse's remarriage plus 10% (15%) to one (two or more) dependent child (children). If there is no surviving spouse, or upon death or remarriage, a total of 15% (20%, 30%) of final salary payable to one (two, three or more) dependent child (children). If there is no surviving spouse (or dependent children), 20% or 30% of final salary to one or two dependent parents.

After Retirement

Death of a retired member of the plan. The benefit is equal to:

- A. Lump sum of 25 % of final salary for a member retired under normal or early retirement. If a member were receiving a disability benefit, a lump sum 1-1/2 times final salary if death occurred before the member attained age 60 and 1/4 times final salary if death occurred after age 60, plus
- B. Spousal life annuity of 25% of final salary payable until spouse's remarriage plus 10% (15%) to one (two or more) dependent child (children). If there is no surviving spouse, or upon death or remarriage, a total of 15% (20%, 30%) of final salary payable to one (two, three or more) dependent child (children).

Disability Retirement

Physically or otherwise incapacitated for the full and efficient service to State in his judicial capacity and such incapacity is likely to be permanent. Benefit is an annual retirement allowance of 75% of final salary.

Member Contributions

Any member enrolled prior to January 1, 1996 contributes 3% of the difference between current salary and salary for the position of January 18, 1982. Members enrolled on and after January 1, 1996 contribute 3% of their full salary.

Chapter 78, P.L. 2011 increases Member Contributions by 9% of salary phased-in over a period of seven years beginning October 2011. (The additional 9% of salary will be fully phased-in in July 2017.)

- A. For members enrolled prior to January 1, 1996:
 - i. Member Contributions of 9% (phased-in over a period of seven years beginning October 2011) of the salary for that position on January 18, 1982.
 - ii. Member Contributions increased from 3% to 12% (phased-in over a period of seven years beginning October 2011) of the difference between current salary and salary for that position on January 18, 1982.
 - Benefit is an annual retirement allowance equal to 75% of final salary.
- B. For members enrolled on or after January 1, 1996, Member Contributions increased from 3% to 12% of full salary phased-in over a period of seven years beginning October 2011.

Appendix B

Outline of Actuarial Assumptions and Methods

Valuation Interest Rate

7.65% per annum, compounded annually.

COLA

No future COLA is assumed.

Salary Increases

Salaries are assumed to increase by 2.00% per year through fiscal year 2025 and 3.00% per year for fiscal years 2026 and thereafter.

401(a)(17) Pay Limit

\$265,000 for 2016 increasing 3.00% per annum, compounded annually.

Separations from Service

Representative mortality and disability rates are as follows:

	Li		
	Death ¹		
Age	Male	Female	Disability
30	0.43	0.38	0.22
35	0.74	0.58	0.26
40	1.04	0.90	0.33
45	1.45	1.38	0.64
50	2.06	2.12	1.14
55	3.49	3.68	1.97
60	6.16	6.71	3.26
65	10.89	11.49	4.73

^{1.} RP-2000 Combined Healthy Male and RP-2000 Combined Healthy Female Mortality Tables (unadjusted for males and set forward 3 years for females) projected on a generational basis from the base year of 2000 to 2013 using Projection Scale BB for the base tables. The base tables are projected beyond the base year using the Buck Modified 2014 Projection scale. The above rates are unadjusted for the Buck Modified 2014 Projection Scale.

Deaths after Retirement

RP-2000 Combined Heathy Mortality Tables (unadjusted for males and set forward 3 years for females) for service retirement and beneficiaries of former member projected on a generational basis from the base year of 2000 to 2013 using Projection Scale BB for the base tables. The base tables are projected beyond the base year using the Buck Modified 2014 Projection scale. The RP-2000 Disability Mortality Tables (set forward 2 years for males and females) are used to value disabled retirees. Representative values of the annual rates of mortality unadjusted for the Buck Modified 2014 Projection Scale are as follows:

		Lives Per Thou	sand	
	Retired Members & Deceased Members	Disabled	Members	
Age	Male	Female	Male	Female
55	3.49	3.68	38.03	18.65
60	6.16	6.71	44.98	24.08
65	10.89	11.49	54.45	31.32
70	18.25	19.63	69.41	42.85
75	31.09	32.13	92.15	59.54
80	52.89	53.43	121.88	82.30
85	91.00	91.72	155.23	114.51
90	158.84	147.61	216.61	159.92

Retirement

Age	Age 60 with 20 Years Judicial Service or Age 65 with 15 Years Judicial Service	After Age 59 with Less than 12 Years Judicial Service	After Age 59 with 12 or More Years Judicial Service (but have not attained 60/20JS or 65/15JS)	Prior to age 60 with 5 Years Judicial Service and 25 Years Public Service
50	0.00000	0.00000	0.00000	0.00000
51	0.00000	0.00000	0.0000	0.00000
52	0.00000	0.00000	0.00000	0.00000
53	0.00000	0.00000	0.0000	0.00000
54	0.00000	0.00000	0.0000	0.00000
55	0.00000	0.00000	0.0000	0.00000
56	0.00000	0.00000	0.0000	0.00000
57	0.00000	0.00000	0.0000	0.00000
58	0.00000	0.00000	0.0000	0.00000
59	0.00000	0.00000	0.0000	0.00000
60	0.30000	0.02500	0.0000	0.00000
61	0.20000	0.02500	0.0000	0.00000
62	0.20000	0.02500	0.0000	0.00000
63	0.30000	0.02500	0.0000	0.00000
64	0.30000	0.02500	0.0000	0.00000
65	0.37500	0.02500	0.10000	0.00000
66	0.24000	0.02500	0.00000	0.00000
67	0.24000	0.02500	0.00000	0.00000
68	0.24000	0.02500	0.00000	0.00000
69	0.24000	0.02500	0.00000	0.00000

Valuation Method

Husbands are assumed to be 3 years older than wives. Among the active population, 90% of participants are assumed married. No children are assumed. Neither the percentage married nor the number of children assumption is individually explicit are considered reasonable as a single combined assumption.

Valuation Method

Projected Unit Credit Method. This method essentially funds the System's benefits accrued to the valuation date. Experience gains and losses are recognized in future accrued liability contributions. In accordance with Chapter 78, P.L. 2011, beginning with the July 1, 2010 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over an open 30 year period. Beginning with the July 1, 2019 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars it will amortize the unfunded accrued liability over a closed 30 year period (i.e., for each subsequent valuation, the amortization period shall decrease by one year.) Beginning with the July 1, 2029 actuarial valuation, when the remaining amortization period reaches 20 years, any increase or decrease in the unfunded accrued liability as a result of actuarial losses or gains for subsequent valuation years shall serve to increase or decrease, respectively, the amortization period for the unfunded accrued liability, unless an increase in the amortization period will cause it to exceed 20 years. If an increase in the amortization period as a result of actuarial losses for a valuation year would exceed 20 years, the accrued liability contribution shall be computed for the valuation year using a 20 year amortization period.

Receivable Contributions

State contributions expected to be paid the June 30th following the valuation date are discounted by the valuation interest rate of 7.65% to the valuation date.

Asset Valuation Method

A five-year average of market values with write-up was used. (This method takes into account appreciation (depreciation) in investments in order to smooth asset values by averaging the excess of the actual over the expected income, on a market value basis, over a five-year period).

Summary of Changes from July 1, 2015 Valuation

The rate of investment return has been reduced from 7.90% per annum to 7.65% per annum. The assumed future salary increases of 2.50% per annum through fiscal year 2021 and 3.50% per annum for fiscal years 2022 and thereafter have been reduced by 0.5% at all ages for both the select and ultimate periods. In addition the select period was extended through fiscal year 2025. The impact of the assumption changes is shown in Section IV A which indicates an increase in the accrued liability of \$7,095,990 due to these assumption changes.

Appendix C

Tabulations Used as a Basis for the 2016 Valuation

The following tables give a reconciliation of data from July 1, 2015 to June 30, 2016. Tables are also given showing active member number and salaries by age and length of service as of July 1, 2016 and showing the number and retirement allowances of beneficiaries classified by age as of July 1, 2016.

Table 1

Reconciliation of Data from July 1, 2015 to June 30, 2016

Reconciliation of Da	ata irom odiy i	, 2013 to suite t	50, 2010							Domostic	
	Actives		Actives Deferred Retirees							Domestic Relations	
	Contrib.	Noncontrib.	Vested	Service	Special	Deferred	Disabled	Beneficiaries	Dependents	Beneficiaries	Total
Members as of July 1, 2015	402	2	4	409	3	4	7	148	4	11	994
Changed to Contributing	1	(1)									
Changed to Noncontributing											
Terminated Vested											
Terminated Non- Vested		(1)									(1)
Service Retirement	(24)			24							
Special Retirement											
Deferred Vesteds Now Payable											
New Disabled											
New Death	(2)			(15)				(7)			(24)
New Beneficiaries								15		1	16
Payments Ceased											
Lump sum New Actives											
Rehires	33										33
Data Corrections				1							1
Members as of June 30, 2016	410	0	4	419	3	4	7	156	4	12	1,019

Table 2

Distribution Of Active Members By Age and Service

Age	Service	1	5	10	15	20	25	30	35	Total
20	Number									
	Salary									
25	Number									
	Salary									
30	Number									
	Salary									
35	Number									
	Salary									
40	Number	2								2
	Salary	330,000								330,000
45	Number	15	10	1						26
	Salary	2,475,000	1,650,000	165,000						4,290,000
50	Number	18	22	8	1					49
	Salary	2,970,000	3,630,000	1,320,000	165,000					8,085,000
55	Number	19	32	23	11					85
	Salary	3,135,000	5,300,482	3,843,863	1,821,731					14,101,076
60	Number	21	25	27	27	13	3			116
	Salary	3,465,000	4,135,534	4,482,799	4,492,747	2,162,265	512,265			19,250,610
63	Number	5	20	10	22	7	4			68
	Salary	825,000	3,300,000	1,667,265	3,688,815	1,186,602	681,068			11,348,750
66 and over	Number	3	15	21	13	1	10	1		64
	Salary	515,482	2,475,000	3,486,068	2,166,068	165,000	1,673,996	175,534		10,657,148
Total	Number	83	124	90	74	21	17	1		410
	Salary	13,715,482	20,491,016	14,964,995	12,334,361	3,513,867	2,867,329	175,534		68,062,584

Table 3

The Number And Annual Compensation Of Active Members Distributed By Age As Of June 30, 2016

Age		Men		Women
	Number	Amount	Number	Amount
42	2	\$ 330,000		
43	2	330,000		
44	1	165,000	2	\$ 330,000
45	2	330,000	1	165,000
46	2	330,000	5	825,000
47	5	825,000	6	990,000
48	4	660,000	2	330,000
49	4	660,000	5	825,000
50	6	990,000	2	330,000
51	4	660,000	6	990,000
52	10	1,650,000	6	990,000
53	4	660,000	5	825,000
54	10	1,650,000	12	1,980,000
55	4	660,000	9	1,485,000
56	18	3,008,329	8	1,320,000
57	8	1,320,000	7	1,192,747
58	15	2,485,534	10	1,650,000
59	14	2,320,534	4	660,000
60	10	1,667,265	12	1,986,731
61	12	1,980,000	15	2,485,534
62	17	2,832,799	7	1,182,213
63	16	2,661,068	11	1,842,799
64	18	3,007,747	10	1,660,534
65	12	2,011,602	1	165,000
66	7	1,165,534	9	1,516,016
67	11	1,821,731	3	505,534
68	14	2,316,731	3	495,000
69	10	1,660,534	3	505,534
70	4	670,534		
Total	246	\$ 40,829,942	164	\$ 27,232,642

Of the 410 active members included in the June 30, 2016 valuation data, 272 are vested and 138 have not yet completed the vesting service requirement.

Table 4

The Number And Annual Compensation Of Active Members Distributed By Service As Of June 30, 2016

Years Of Service		Men	Women		
	Number	Amount	Number	Amount	
0	2	\$ 330,000	6	\$ 1,010,482	
1	15	2,475,000	24	3,960,000	
2	10	1,650,000	25	4,125,000	
3	15	2,475,000	9	1,485,000	
4	12	1,980,000	6	990,000	
5	17	2,815,534	12	2,000,482	
6	16	2,640,000	6	990,000	
7	20	3,300,000	10	1,650,000	
8	19	3,135,000	8	1,320,000	
9	13	2,183,329	5	825,000	
10	8	1,330,534	1	165,000	
11	15	2,485,534	5	835,534	
12	12	2,014,530	3	495,000	
13	9	1,506,068	6	990,000	
14	15	2,512,747	4	670,534	
15	17	2,815,534	6	990,000	
16	5	825,000	5	858,944	
17	5	835,534	2	330,000	
18	5	835,534	3	505,534	
19	6	1,000,534	4	681,068	
20			1	165,000	
21	2	330,000	2	336,731	
22			1	165,000	
23	2	340,534	3	505,534	
24	2	340,534	2	330,000	
25	2	336,731	2	336,731	
26	1	171,731			
27	1	165,000	2	340,534	
29			1	175,534	
Total	246	\$ 40,829,942	164	\$ 27,232,642	

Of the 410 active members included in the June 30, 2016 valuation data, 272 are vested and 138 have not yet completed the vesting service requirement.

Table 5

Average Age and Annual Benefit at Retirement

	Service Retirement		Disability Retirement		Survivors	
	Average Age At Retirement	Average Annual Benefit At Retirement ¹	Average Age At Retirement	Average Annual Benefit At Retirement ¹	Average Age At Retirement ²	Average Annual Benefit At Retirement
All Retirees	66.0	\$ 98,230	61.6	\$ 110,798	59.0	\$ 48,210
New Retirees	66.0	\$ 107,499	N/A	N/A	62.0	\$ 55,804

	All Retirements (excluding Survivors) Average Age At Retirement At Retirement				
All Retirees	65.6 \$ 99,687				

¹The Average Annual Benefit at Retirement does not reflect COLA's granted after retirement.

²Calculated as of Member's Date of Retirement

Table 6

The Number And Annual Retirement Allowances Of Retired Members Distributed By Age As Of June 30, 2016

Service Retirements

Age		Men	Women			
	Number	Amount	Number	Amount		
59			1	\$ 12,375		
60	1	\$ 115,706				
61			1	39,432		
62	2	233,888	2	189,281		
63	2	199,155	2	229,448		
64	3	339,254	1	131,651		
65	6	645,843	2	170,644		
66	12	1,394,894	2	173,679		
67	8	922,052	10	1,194,527		
68	15	1,723,504	4	338,757		
69	17	1,893,172	3	241,321		
70	11	1,130,265	4	386,363		
71	27	3,001,483	7	761,503		
72	23	2,517,009	3	364,196		
73	19	2,090,220	5	385,537		
74	21	2,380,139	6	684,618		
75	21	2,283,439	1	117,925		
76	15	1,657,258	1	123,750		
77	15	1,503,064	1	46,212		
78	10	1,146,785	4	430,996		
79	20	1,984,083				
80	17	1,605,643	2	183,012		
81	10	994,755	3	240,232		
82	15	1,493,066				
83	11	1,106,782	2	47,063		
84	12	1,175,022				
85	7	796,933	2	160,453		
86	10	1,024,802				
87	10	955,288	1	104,422		
88	4	391,044	1	103,503		
89	3	310,012				
90	5	469,372				
91	2	200,016				
92	5	470,129				
93	4	372,235				
94	2	198,674	1	101,350		
95			1	91,935		
Total	365	\$ 38,724,986	73	\$ 7,054,185		

Table 7

The Number And Annual Retirement Allowances Of Beneficiaries Distributed By Age As Of June 30, 2016

Disability Retirements

Age	Men			Women		
	Number		Amount	Number		Amount
60				1	\$	115,531
66	1	\$	124,922			
68				1		123,750
69	1		123,750			
71	1		123,750			
73	1		111,746			
96	1		95,115			
Total	5	\$	579,283	2	\$	239,281

Table 8

The Number And Annual Retirement Allowances Of Beneficiaries Distributed By Age As Of June 30, 2016

Active Members' Death Benefits

Age	Men			Women		
	Number		Amount	Number	Amount	
62	1	\$	102,094	1	\$ 66,012	
74				1	39,704	
77	1		34,807			
79						
80				3	99,266	
81				2	69,737	
82				1	33,783	
83				2	67,285	
85				2	66,353	
87				2	61,673	
92				1	33,783	
				1	27,915	
Total	2	\$	136,901	16	\$ 565,511	

Table 9

The Number And Annual Retirement Allowances Of Retired Members Distributed By Age As Of June 30, 2016

Retired Members' Death Benefits

Age		Men	Women		
	Number	Amount	Number	Amount	
19		Ti Ti	1	\$ 19,081	
49	1	\$ 21,252			
62	1	19,082	1	39,628	
64			2	164,967	
65			3	139,075	
66			2	137,315	
67			1	128,955	
68	1	11,761	4	196,466	
69			3	200,800	
70			3	158,701	
71			3	143,632	
72			6	492,814	
73			2	80,711	
74	1	41,250	7	593,230	
75	1	43,239	4	337,923	
76			5	366,106	
77			1	114,313	
78	1	44,093	3	187,467	
79			6	345,099	
80			6	319,709	
81			4	219,958	
82			5	281,967	
83			5	186,849	
84			4	251,457	
85			5	363,121	
86	2	108,339	1	41,250	
87			6	257,406	
88			3	90,686	
89			10	469,133	
90			7	352,956	
91			1	35,250	
92			6	223,163	
93			4	246,249	
94			1	34,291	
95			1	33,783	
96			2	53,729	
97			1	30,139	
98			3	95,618	
100			1	28,171	
104			1	42,933	
Total	8	\$ 289,016	134	\$ 7,504,101	

Table 10

The Number And Annual Retirement Allowances Of Retired Members Distributed By Age As Of June 30, 2016

Deferred Terminated Vesteds

Age		Men	Women		
	Number	Amount	Number	Amount	
54			1	\$ 39,875	
55			1	66,000	
57	1	\$ 56,375			
71	1	21,250			
Total	2	\$ 77,625	2	\$ 105,875	